CLAIMS

1. A charging method of a nonaqueous electrolyte secondary battery which comprises a positive electrode plate including a lithium-manganese composite oxide with spinel structure; a negative electrode plate including graphite capable of storing and discharging lithium; and nonaqueous electrolyte, wherein:

when a ratio of a theoretical capacity of the negative electrode plate to a theoretical capacity of the positive electrode plate is set as $R_{N/S}$ and the graphite which has stored lithium by charging is represented by Li_xC_6, the nonaqueous electrolyte secondary battery is charged so that Xmax, which is a maximum one of the value that X can be, satisfies following Conditions (1) and (2):

Condition (1) $Xmax \leq 0.75$

Condition (2) $Xmax \leq -0.70R_{N/S}+1.31$

2. A charging method of the nonaqueous electrolyte secondary battery according to claim 1, wherein the Xmax further satisfies following Condition (3):

Condition (3) $Xmax \geq -0.45R_{N/S}+0.99$

3. A charging method of the nonaqueous electrolyte secondary battery according to either claim 1 or claim 2, wherein the Xmax is 0.65 or smaller.

4. A charging method of the nonaqueous electrolyte secondary battery according to any one of claim 1 to claim 3, wherein the $R_{N/S}$ is 0.8 or more.

5. A charging method of the nonaqueous electrolyte secondary battery according to any one of claim 1 to claim 4, wherein a mole ratio of lithium of the lithium-manganese composite oxide to a metal element other than lithium is larger than 0.5 to 0.63 or smaller.

6. A charging method of the nonaqueous electrolyte secondary battery according to any one of claim 1 to claim 5, wherein a metal element other than manganese exists in a part of manganese site of the lithium-manganese composite oxide.

7. A charging method of the nonaqueous electrolyte secondary battery according to claim 6, wherein the metal element other than manganese includes at least one chosen from Al, Cr, Ga, Y, Yb, In, Mg, Cu, Co and Ni.

8. A charging method of the nonaqueous electrolyte secondary battery according to any one of claim 1 to claim 7, wherein the graphite includes mesophase pitch-based graphite.

9. A charging method of the nonaqueous electrolyte secondary battery according to any one of claim 1 to claim 8, wherein the nonaqueous electrolyte includes a vinyl compound.

10. A charging method of the nonaqueous electrolyte secondary battery according to claim 9, wherein the vinyl compound is either one of vinylene carbonate and vinylethylene carbonate.

11. A charging method of the nonaqueous electrolyte secondary battery according to either of claim 9 or claim 10, wherein the vinyl compound accounts for 0.0004 wt% or higher to 1.5 wt% or lower based on total weight of the nonaqueous electrolyte.

12. A nonaqueous electrolyte secondary battery which comprises a positive electrode plate including a lithium-manganese composite oxide with spinel

structure; a negative electrode plate including graphite capable of storing and discharging lithium; and nonaqueous electrolyte, wherein:

when a ratio of a theoretical capacity of the negative electrode plate to a theoretical capacity of the positive electrode plate is set as $R_{N/S}$ and the graphite which has stored lithium by charging is represented by Li_xC_6, the nonaqueous electrolyte secondary battery is charged so that Xmax, which is a maximum one of the value that X can be, satisfies following Conditions (1) and (2):

Condition (1) $Xmax \leq 0.75$

Condition (2) $Xmax \leq -0.70R_{N/S}+1.31$